Highlights of Astronomy, Vol. 13
International Astronomical Union, 2003
O. Engvold, ed.

Working Group on Designations and Special Session 3

Helene Dickel
Univ. of Illinois, Astronomy Dept., 103 Astron. Bldg., 1002 W. Green St., Urbana, IL 61801

Marion Schmitz
Caltech, MS 100-22, Pasadena, CA, 91125

1. WGD Activities

The WGD is a part of Commission 5 - Documentation and Astronomical Data. There is a president, vice-president, and over a dozen members world-wide.

One duty of the WG is to maintain and update a web-site which contains the IAU Recommendations for Nomenclature. These recommendations include suggestions for creating new names for objects and examples of improper nomenclature.

The WG also receives, reviews, and approves new submissions for the Acronym Registry as proposed by major projects and individual researchers. We look forward to the submission of the WMC to the Registry.

One sub-group of the WG is involved with software which resolves object names into positions for NED and SIMBAD/VizieR. Plus, several of us are on the look-out for non-conforming designations in preprints and journal articles and often inform the authors and journal editors of potential problems. Recent experience has shown that authors have been positively receptive of our comments.

2. Applicability of WGD to SPS3

The WG on Designations helps projects understand the need and use of standards in nomenclature. We also help inform professionals and amateurs about the need for standards and provide a list of currently accepted acronyms in the on-line Dictionary (http://vizier.u-strasbg.fr/viz-bin/Dic). Additional Web links for many of the acronyms are also provided.

3. Designation vs. Data

One aspect of nomenclature which needs to be understood is that whatever designation is assigned to an object must be considered to be permanent. Observational data may change, but not the names.

If an object name is to be based on position, it must be remembered that positions are epoch AND equinox dependent. For example, the positions of proper motion stars and orbiting binaries need to be accurately determined if

future researchers are going to be able to determine the correct objects. Positions can also be wavelength dependent.

The resolution of the detection method also plays a factor in the assignment of positional names. Low resolution detections should not have "high precision" designations.

4. Positional Designations

Positional designations are made up of two parts - the acronym and the position. When used to create the positional part of a name, the cataloged position should contain one decimal place more precision than the designation. When doing this, the catalog position needs to be truncated rather than rounded off. Also, the designation should not imply higher accuracy than is warranted by the observation.

For example, the FIRST radio catalog has an object at the cataloged position: FIRST J100956.9+300850 @ 10h09m56.98s, $+30°08'50.9''$. The designation of the object, therefore, is composed of a truncated version of that position.

5. Remember the "J"

Perhaps one of the more subtle, but significant, parts of a modern positional designation is the use of the letter "J" for J2000 coords or "B" for B1950. For researchers not familiar with the acronym used for a given object, the letter of the epoch is crucial in being able to locate the object on the sky. By default, a positional name without a "B" or "J" is assumed to be at B1950.

For example, take the case of SDSS 1533-00 as recently used in the literature. At first glance, one would recognize that the object was detected in the Sloan Digital Sky Survey at approximately 15h33m, $-00°$ degrees in B1950.

However, the Sloan catalogs do not contain any object by this name. It turns out that the author took many liberties in creating an easy-to-use nickname for the intended object. The R.A. was rounded instead of truncated; the Dec. was drastically truncated; the "J" was dropped; and even the acronym was modified for convenience.

Even so, there turn out to be two distinct SDSS objects which qualify for this "convenient" name.

6. The Horror of Nicknames

Although I know no one in this room would ever go to such drastic measures for the sake of convenience, I'd like to just show a few recent examples of object names which have caused (and continue to cause) confusion in the literature.

At first glance, one might assume that N49 was a shortened version of NGC 49, when in actuality it refers to the 49th Nebula in the SMC (there is also an N49 in the LMC).

Next is a case where one familiar with astronomy history may guess that "SA" as used here stands for one of Kapteyn's Selected Areas. However, it would then be realized that there were not 1600 fields in the SA list. Next, the

assumption might be that the object has coordinates near 16h56m, -2° 0′. As it turns out, that, too, is incorrect. This object happens to be the 20th galaxy in a new structure discovered in Abell 1656.

This last example seems quite harmless in that stellar astronomers "know" that HR 10 is a 6th magnitude star from the Harvard Revised catalog of Bright Stars. Extragalactic astronomers "know" that this is the 10th object in a list by Hu and Ridgway of Extremely Red Objects which turns out to be a galaxy at redshift 1.44. Four individuals at NED and SIMBAD "know" that they need to be careful about how they refer to this object in their databases because it is too easy to get the star and the galaxy confused based solely on name. The name of the Hu and Ridgway object in NED and SIMBAD is [HR94] 10.

To conclude, "It's a crowded sky up there. You are not alone."

1. Discussion

SCARFE: Let me emphasize that the ambiguity between dashes and minus signs is a real menace.
SCHMITZ: Agreed. Designations that look like coordinate names (but aren't) should be avoided.

HARTKOPF: In the WMC sample catalog there were ~20 objects known only to arcminute accuracy. At present I pad the designation with zeroes for consistency with the vast majority. What's the best way to handle them?
SCHMITZ: It would be best to not imply higher accuracy than is warranted. If it is possible to use nulls or blanks instead of zeroes, such that future researchers are not misled to an implied accurate position.